

DOCUMENT RESUME

ED 178 900

CS 005 137

AUTHOR Yussen, Steven R.: And Others
 TITLE Developmental Change in Judging Important and Critical Elements of Stories.
 INSTITUTION Wisconsin Univ., Madison. Research and Development Center for Individualized Schooling.
 SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
 REPORT NO WRDCIS-TR-524
 PUB DATE Oct 79
 GRANT OB-NIE-G-78-0217
 NOTE 29p.
 EDRS PRICE MF01/PC02 Plus Postage.
 DESCRIPTORS Children; Cognitive Development; *Content Reading; *Developmental Stages; Elementary Education; *Reading Comprehension; *Reading Research; Recall (Psychological); *Story Reading
 IDENTIFIERS *Story Grammar

ABSTRACT

Two experiments were conducted to examine children's understanding (metacognitive awareness) of the parts to a simple story. The following parts were considered essential for comprehending a story: what precipitates the character's action (initiating event), what the character did (action), and what followed the character's action (consequence). Analysis of children's judgments of simple stories revealed that second grade students seldom selected the prescribed sequence, but that fourth, fifth, and sixth grade students and adults did select the sequence under a variety of conditions. Individual differences in recall of the stories also were predictable from older children's (fifth graders) judgments of the stories, but not from younger children's (second graders) judgments. (Author/RI)

 * Reproductions supplied by EDRS are the best that can be made *
 * from the original document. *

ED178900

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

Technical Report No. 524

DEVELOPMENTAL CHANGE IN JUDGING
IMPORTANT AND CRITICAL ELEMENTS OF STORIES

by

Steven R. Yussen, Samuel R. Mathews, II,
Ray R. Buss, and Patrick Kane

Report from the Project on
Studies of Instructional Programming
for the Individual Student

Steven R. Yussen
Faculty Associate

Wisconsin Research and Development Center
for Individualized Schooling
The University of Wisconsin
Madison, Wisconsin

October 1979

CS025137

Published by the Wisconsin Research and Development Center for Individualized Schooling. The project presented or reported herein was performed pursuant to a grant from the National Institute of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the National Institute of Education, and no official endorsement by the National Institute of Education should be inferred.

Center Grant No. OB-NIE-G-78-0217

MISSION STATEMENT

The mission of the Wisconsin Research and Development Center is to improve the quality of education by addressing the full range of issues and problems related to individualized schooling. Teaching, learning, and the problems of individualization are given concurrent attention in the Center's efforts to discover processes and develop strategies and materials for use in the schools. The Center pursues its mission by

- conducting and synthesizing research to clarify the processes of school-age children's learning and development
- conducting and synthesizing research to clarify effective approaches to teaching students basic skills and concepts
- developing and demonstrating improved instructional strategies, processes, and materials for students, teachers, and school administrators
- providing assistance to educators which helps transfer the outcomes of research and development to improved practice in local schools and teacher education institutions

The Wisconsin Research and Development Center is supported with funds from the National Institute of Education and the University of Wisconsin.

WISCONSIN RESEARCH AND DEVELOPMENT
CENTER FOR INDIVIDUALIZED SCHOOLING

Abstract

Two experiments were conducted to examine children's understanding (metacognitive awareness) that in a simple story, the following parts are most important or essential for comprehending it: what precipitates the character's action (Initiating Event), what the character did (Action), and what follows the character's action (Consequence). Children's judgments of simple stories revealed that second graders seldom selected this sequence, but that fourth, fifth, and sixth graders and adults did under a variety of conditions. In addition, individual differences in recall of the stories were predictable from older children's (fifth graders) judgments of the stories, but not from younger children's (second graders) judgments.

Currently a great deal of effort is being directed toward developing models of how individuals remember and comprehend meaningful connected discourse (Fredericksen, 1977; Kintsch, 1977). One skill frequently identified as necessary for processing prose is the ability to detect important information. Previous research has shown that children's ability to identify the central point (Danner, 1976) or different levels of importance (Brown & Smiley, 1977) in a story increases across the elementary school years. However, the previous work has specified "importance" without an explicit theory of story structure.

In the present study, we use a formal grammar for stories and predict that a specific type of knowledge about story structure increases during the elementary school years. The grammar, developed by Nancy Stein and her colleagues (e.g., Stein & Glenn, 1978), is a set of rules which specifies the structural units present in a story and the manner in which they are related to one another (i.e., logical ordering). In Tables 1 and 2, a simple story is given along with Stein's theoretical specification of the structural units contained in it.

To summarize briefly, the grammar specifies that a simple story consists of Setting information, followed by one or more Episodes. (Here, for even greater simplicity, we present a story with only one episode.) The episode can be broken into five parts: the Initiating Event (what precipitated a character's action), the Internal Response (the motive and goal of the character), the Attempt (what the character did), the Consequence

Table 1
Structural Units in a Simple Story

Categories included in a simple story	Definition
Setting	•Introduction of the protagonist; can contain information about physical, social, or temporal context in which the remainder of the story occurs.
Initiating Event	•An action, an internal event, or a natural occurrence which serves to initiate or to cause a response in the protagonist.
Internal Response	•An emotion, cognition, or goal of the protagonist.
Attempt	•An overt action to obtain the protagonist's goal.
Consequence	•An event, action, or endstate which marks the attainment or nonattainment of the protagonist's goal.
Reaction	•An emotion, cognition, action or end-state expressing the protagonist's feelings about his goal attainment or relating the broader consequential realm of the protagonist's goal attainment.

Note. Table 1 is adopted from Stein and Glenn (1978).

Table 2
A Simple Story

Structural units	Example of a well-formed story
Setting	1. Once there was a big gray fish { named Albert. 2. He lived in a big icy pond near the edge of a forest. 3. One day, Albert was swimming
Initiating Event	{ around the pond. 4. Then he spotted a big juicy worm on top of the water. 5. Albert knew how delicious worms
Internal Response	{ tasted. 6. He wanted to eat that one for his dinner. 7. So he swam very close to the worm.
Attempt	{ 8. Then he bit into him. 9. Suddenly, Albert was pulled
Consequence	{ through the water into a boat. 10. He had been caught by a fisherman. 11. Albert felt sad.
Reaction	{ 12. He wished he had been more careful.

Note. Table 2 is adopted from Stein and Glenn (1978).

(what resulted from the character's action), and the Reaction (the character's thoughts or feelings about having attained or not attained the desired goal).

According to the grammar (Stein & Glenn, 1978), the basic thread of a simple story can be maintained if we know the Initiating Event (IE), the Attempt (A), and the Consequence (C). Thus, from the sample story about Albert the fish, we have:

One day Albert was swimming in the pond when he spotted a worm in the water. So he swam very close to the worm and bit into him. Suddenly, Albert was pulled through the water. He had been caught by a fisherman.

By contrast, the remaining categories of information, Setting (S), Internal Response (IR), and Reaction (R), are not sufficient for easily comprehending the story. As can be seen in the following example, a number of creative additions and long inferential leaps are required to construct a sensible story from the latter information:

Once there was a fish named Albert who lived in a pond near the forest. Albert knew how delicious worms tasted and wanted one for his dinner. Albert felt sad and wished he had been more careful.

The salience of the three grammatical categories--IE, A, and C--is supported by children's actual recall of stories like our example. These three categories have a greater probability of being recalled than the others (Stein & Glenn, 1978). This result seems to be developmentally invariant, since the same pattern of differential recall is observed across a broad range from elementary school to adulthood.

However, it is another matter whether children realize the salience of these categories of information. As in other metacognitive realms (e.g., memory, Flavell & Wellman, 1977), awareness of how the structure of information influences performance may be absent in young children, even though the influence of the structure is great.

The specific purpose of the study, then, was to examine children's (metacognitive) awareness that the Initiating Event, Action, and Consequence define the elements most critical for understanding a story or what is most important in it. Based on the previously mentioned research (i.e., Brown & Smiley, 1977; Danner, 1976) and other research documenting developmental changes in children's awareness of prose coherence (e.g., Markman, 1977), we expected to find an increase in this awareness across the elementary school years. That is, we expected an increase across grades in the frequency with which subjects selected the key sequence (IE-A-C) as most important or critical for understanding.

EXPERIMENT 1

Experiment 1 required children from second, fourth, and sixth grades and a group of adults to select three elements from a series of stories, analogous to the sample narrative in Table 1. Since the procedure required the children to read and examine parts of a story, second graders were chosen as the youngest group. Adults were also tested to have a mature comparison point. Judgments were made in a forced choice or spontaneous fashion to allow for detection of different degrees (or levels) of awareness. Since there was some uncertainty about whether the notion of importance is semantically equivalent to the notion of most critical

for understanding, subjects were asked to make judgments directed toward both concepts.

Method

Subjects

There were 69 subjects in all, 18 each from second, fourth, and sixth grade classes in a parochial school near Madison, Wisconsin, and 15 undergraduates from the UW-Madison. There was an approximately equal number of males and females at each grade level and the respective ages were, 8-3, 10-0, 12-0, and 20-5 years. All subjects were native English speakers and predominantly white and middle class.

Materials

Six stories conforming to the simple narratives of Stein and Glenn (1978) were used. Three of the stories were previously employed by Stein and Glenn and three were written by the authors. All were one-episode narratives containing the six grammatical categories, with two propositions per category. The set of stories was rated by eight independent adult judges to determine if any inherent, stylistic differences existed among them. The judges were unable to distinguish between the Stein and Glenn stories and those created by the present authors.

For the children, each story was recorded on a cassette tape and each component of the story (Setting, Initiating Event, etc.) was printed on separate 3 x 5 inch cards. The college subjects received a booklet containing instructions and the stories.

Design

Each subject made two types of decisions which will subsequently be referred to as importance and most critical. For each decision, there was a constraint to identify three parts of the story. For each type of decision (importance or most critical), there were two response formats--forced choice and spontaneous selection.¹

The subject made each type of decision (importance or most critical) three times. A different story was employed for each decision. Within decision type, the forced choice response format was used once and the spontaneous selection format twice.² The order of tasks and the assignment of stories to tasks were randomized across subjects.

¹The procedure also required children to offer explanations after all judgments of a particular decision type (importance, most critical) had been made. Explanations were recorded and later transcribed. Unfortunately, these data did not prove amenable to reliable and interpretable analysis and so are not reported in the paper.

²Both a forced choice and a spontaneous selection procedure were used to allow some flexibility in assessing children's awareness. It was assumed that a forced choice procedure would tap a gross "discrimination" level of awareness, while spontaneous selection would reflect a more advanced cognitive understanding. A priori, both seemed important. However, there was no plan to directly compare the measures on the basis of an equal number of decisions. This was precluded due to the different levels of chance operating for each. So, it was decided to afford the children more opportunities to make spontaneous selections, since this seemed to be the more interesting cognitive task.

Procedure

Children were tested individually; adults were tested in small groups of three to four. All testing was completed by the second author. Each subject was introduced to the procedure with two practice trials in which short, three-sentence stories were presented for judgments. In the experiment proper, the second, fourth, and sixth graders listened to a story on the cassette³, read the story aloud from 3 x 5 inch cards (displayed in order in a vertical column from top to bottom), and then made a selection for that story. For the judgments of importance, the experimenter simply asked the subject to identify the parts of the story which were most important. For judgments of most critical, the experimenter asked the subject to identify the parts of the story which would be most necessary for communicating an abbreviated version of it to a friend. In the forced choice format, the experimenter quickly divided the story cards into two halves--the Initiating Event, Attempt, and Consequence in one half and the Setting, Internal Response, and Reaction in the other. The task was to point to the half which contained the more important or critical information. In spontaneous selection, the story cards continued to appear in the vertical column and the task was to pick up the three parts (cards) that contained the most important or critical information.

³For children, we decided to minimize potential differences in performance due to decoding problems, by first presenting stories orally. As subjects reread the stories on cards, we encountered only two second graders who had slight difficulty reading some of the words. The experimenter freely helped the child in these circumstances and rehearsed the story aloud until he was convinced the child could read all the sentences easily.

The college students had a parallel procedure in booklet form. They were directed to read each story printed on a page and to turn to the next page, where the story was reprinted for making their decision. In forced choice decisions, the reprinted story was divided into two parts, in two columns alongside one another. Each contained the alternative sets of three categories. The adult circled one of the two columns for the decision. In spontaneous selection, the story was reprinted in a single vertical column with the parts clearly separated from one another, and the subject circled three parts for the decision.

Results

The proportion of judgments for which subjects selected the three key categories in contrast to others is displayed in Table 3. For each case produced by crossing the response format with the type of decision (i.e., each row in Table 3), an age comparison was made by performing a 1 x 4 Chi square test of the equality of proportions. Since some of the cell frequencies were small, an arcsin transformation was applied to the proportions and the tests were performed on the transformed data. This transformation has the effect of making each test more conservative, since it reduces the range of the proportions. For spontaneous choices, the apparent age increase was significant for both the importance ($\chi^2 = 8.33$, $df = 3$, $p < .05$) and most critical ($\chi^2 = 19.62$, $df = 3$, $p < .001$) judgments. But, for forced choices, the age increase was only significant for the most critical judgments ($\chi^2 = 13.98$, $df = 3$, $p < .01$).

Each proportion was also tested, by means of a binomial test, against the chance likelihood of selecting the key sequence. By chance, the proportions would be .05 in spontaneous judgments and .50 for forced choice

Table 3
Proportions of Judgments for Which Subjects Selected
the Three Key Categories (IE-A-C) by Grade, Response Format,
and Type of Decision in Experiment 1

Response format and type of decision	Grade			
	2	4	6	College
Spontaneous ^a				
Importance	.06	.14*	.25**	.27**
Most critical	.06	.22**	.22**	.50**
Forced choice ^b				
Importance	.56	.67*	.83**	.87**
Most critical	.39	.88**	.67*	.87**

^aFor spontaneous judgments, each proportion is based on 36 cases for children (18 children x 2 judgments) and 30 cases for college students (15 students x 2 judgments). Given 20 different ways of choosing 3 categories from among 6, by chance, subjects' proportion of selecting the key sequence would be .05.

^bFor forced choice judgments, each proportion is based on 18 cases for children (18 children x 1 judgment) and 15 for college students (15 students x 1 judgment). Given only two choices, by chance, subjects' proportion of selecting the key sequence would be .50.

*Different than chance at a marginally significant level, $\underline{z} > 1.50$, $p < .07$.

**Different than chance at a significant level, $\underline{z} > 2.46$, $p < .01$.

judgments (see the explanation at the bottom of Table 3). In every case, the second graders' proportions failed to exceed chance, but at all other grades, proportions significantly exceeded chance ($Z < 3.79$, $p < .001$) or nearly exceeded chance ($Z < 1.50$, $p < .07$).

Since in the spontaneous choices the key sequence was not selected the majority of the time, the natural question which arises is: What other grammatical categories or combinations of categories were frequently selected by the subjects? An informal inspection of subjects' individual choices revealed that for second graders, several other patterns of selection occurred most frequently. For importance, these were IE-A-R, S-IR-C, and S-IR-R. For most critical judgments, these were S-IE-IR, S-IE-R, and S-IR-R. For the older children and adults, the key sequence was the most frequently selected one at each grade for both importance and most critical judgments.

In addition, it is possible to examine the frequency with which any one grammatical category of information appeared in subjects' choices, ignoring for the moment the obvious problem of interdependencies across categories. The Initiating Event was selected most frequently for both importance and most critical judgments for the sixth graders and adults. For fourth graders, the Initiating Event was selected most frequently for most critical judgments, while the Consequence was most frequent in importance judgments. And, for second graders, the Setting and Initiating Event were selected most frequently and equally often in the most critical judgments, while the Reaction was selected most frequently in the importance judgments.

Brief Discussion

The basic expectation was confirmed. With increasing age, from the early elementary school years onward, there was an increase in the likelihood of subjects identifying the Initiating Event, the Action, and the Consequence as the major elements of the story. The major shift seemed to occur between second and fourth grades. Second graders never exceeded chance in their likelihood of selecting these grammatical elements, while fourth graders did or nearly did for both types of decisions and for both response formats.

An examination of the modal patterns selected spontaneously revealed that second graders more frequently selected sequences in which the Setting, Internal Response, and Reaction were present, while the older children and adults selected the key sequence most frequently. For second graders, the individual categories occurring most frequently in their spontaneous choices were the Reaction (importance judgments) and both the Setting and Initiating Event (most critical judgments), while the individual categories occurring most frequently for the older children and adults were always drawn from the key sequence.

EXPERIMENT 2

In experiment 2 we attempted to replicate part of the earlier experiment and extend the findings in two significant ways. In one procedural addition, each child was asked to select one, two, three, or as many elements of stories as he or she deemed necessary to capture what is most essential. By so doing, we allowed for the possibility that individuals might

not focus on elements of the key sequence when they do not have to choose exactly three parts of the stories. In the second procedural addition, each subject was asked to recall two of the stories that were presented. This was: (a) to insure that the three key categories of the grammar actually are salient in memory as previously found and (b) to determine if children's tendency to select key categories is associated with their recall performance.

To simplify the design, subjects were asked to make only spontaneous-most critical judgments, since this combination had produced the strongest result in experiment 1. In addition, because the major shift occurred after second grade, the experiment 2 sample included second and fifth graders.

Method

Subjects

There were 45 subjects--22 second graders and 23 fifth graders--drawn from a rural school near Milwaukee, Wisconsin. The mean ages were 8-0 and 11-1 years, respectively, and the number of boys and girls at each age was nearly equal. All subjects were native English speakers, white, and lower middle to middle class.

Materials

Eight stories were used, six from experiment 1. The two new stories were written with the same constraints on structure, length, and vocabulary. Several judges rated these additional stories as equivalent to the others in structure and style. As before, each story was recorded on a cassette tape and printed on 3 x 5 inch cards.

Design and Procedure

Each child was asked to select (spontaneously) the most critical elements in each of the eight stories. For two stories, children were directed to select one part, for another two stories--two parts, for two more stories--three parts, and for the remaining two stories--any number of parts, short of the entire story. The order of presenting stories was counterbalanced and the order of judgment (i.e., select one, select two) was randomized.

Following the second and seventh stories, but preceding the judgments for those stories, each child freely recalled the story aloud. This was to provide multiple recall trials which come either relatively early or late in the test sequence.

Children were administered the procedure by the second and fourth authors, each of whom selected (at random) half of the children at each grade for individual testing. Each child again received two practice trials with short stories. On one he or she made a judgment; on the other, the brief story was recalled. The judgments were elicited in exactly the same manner as for the case of most critical-spontaneous selection in experiment 1. For free recall, the child heard the recorded story once and was immediately asked to repeat the story exactly as he or she heard it. The child's recall was recorded on another cassette.

Results

Judgments

When asked to choose one element, 57% of the second graders and 67% of the fifth graders chose one of the three key categories, with the modal selection being the Initiating Event at both grades (39 and 49%, respec-

tively). A binomial test for the difference in proportions between the groups revealed that neither grade difference was statistically significant. The likelihood of selecting one of the three key categories as opposed to others is 50% (3/6). Second graders' tendency to choose one of the key categories did not significantly exceed chance, while fifth graders' did ($Z = 2.45$, $p < .01$). The likelihood of selecting any one category is 17% (1/6). Both second and fifth graders selected the Initiating Event with a significantly greater frequency than chance ($Z < 3.05$, $p < .01$, in each case).

When asked to choose two elements, 27% of the second graders and 48% of the fifth graders chose one of three chains, where both parts were key categories (i.e., IE-A, IE-C, or A-C). The likelihood of doing so by chance is 20% (3 of 15 possible pairwise category combinations). The second graders' selections were not significantly above chance, while the fifth graders' selections were ($Z = 3.80$, $p < .01$). The binomial test for the difference in proportions revealed that the fifth graders selected key chains more often than the second graders ($Z = 2.11$, $p < .05$).

When asked to choose three elements, 9 and 24% of the children at the two grades, respectively, chose all three key categories. The grade difference in proportions was statistically significant ($Z = 2.11$, $p < .05$). The fifth graders selected these elements at a significantly greater level than chance (which, as in experiment 1, is $1/20 = 5\%$), $Z = 3.02$, $p < .01$, but the second graders did not.

When asked to choose any number of parts, the mean number of parts selected at the two grades was 3.36 ($SD = .967$) and 3.40 ($SD = .805$)--virtually identical. The distribution of choices was such that, at both

grades, the greatest number of children selected three or four parts (61% for second grade, 80% for fifth grade). For those children selecting either three or four parts, the single, modal category represented in their choices was the Initiating Event (83 and 87% for the respective grades). The key sequence occurred 24% of the time for second graders and 35% of the time for fifth graders. No formal statistical comparisons were performed on these data, since they represent self-selected subsamples.

Recall

Following a procedure adopted by Stein and Nezworski (1978), each child's recall protocol was transcribed and compared for semantic agreement with the original story. The story could be divided into 12 propositions (2 propositions per category, 6 categories--see sample story in Table 2). Two raters, the second and third authors, each scored every protocol independently. Using a conservative procedure to check reliability, the exact agreement between the raters was calculated for whether each specific proposition was recalled for each subject on each recall trial. The resulting Chronbach alpha was .86. The interjudge correlation between the raters on the number of propositions recalled per story per child is higher, $r = .98$. All disagreements were resolved following discussion. In Table 4 the mean recall is displayed by grade on a category by category basis. With two propositions per category, mean recall for each category could range from 0 to 2. By inspection, it can be seen that recall for the key categories (IE, A, C) is higher than recall for the others (S, IR, R) at both grades. Collapsing recall into two category groupings--key (summing across key categories) and other (summing across nonkey categories)--a two-way ANOVA for grade (2) and the repeated measure

Table 4
Means and SD's for Number of Propositions
Recalled by Grade and Structural Category

Grade	Category					
	<u>S</u>	<u>IE</u>	<u>IR</u>	<u>A</u>	<u>C</u>	<u>R</u>
Second ^a						
$\bar{X}$	.62	1.29	.50	1.12	1.45	.62
<u>SD</u>	.52	.54	.35	.61	.61	.63
Fifth ^b						
$\bar{X}$	1.13	1.48	.72	1.24	1.37	.80
<u>SD</u>	.61	.55	.45	.62	.57	.60

^aThere were 22 subjects, but one protocol was indecipherable, leaving 21.
Each child had two recall trials.

^bThere were 23 subjects and all protocols were scored. Again, each child
had two recall trials.

of category type (2) revealed a marginally significant grade effect ($F = 3.22$, $df = 1.42$, $p < .08$) and a highly significant category type effect ($F = 72.24$, $df = 1.42$, $p < .001$). Older children recalled moderately more than second graders and key categories were recalled significantly better than the others. There was no significant interaction.

A regression procedure was used to examine the amount of variation in total recall accounted for, at each grade, by the children's tendency to choose key categories. The results of three judgment tasks were used as the independent variables--select one, select two, and select three. Scores for each subject could range from 0-2, 0-4, and 0-6 on the three tasks, respectively, with the numbers reflecting how many key categories were selected as the child judged each of two stories. The dependent variable was the subject's total recall across the two stories freely recalled. The independent variables were allowed to enter the regression equation in a forward step-wise fashion. The following results were obtained: At second grade, the independent variables did not account for significant variation in recall, either alone or cumulatively. However, at fifth grade, a significant amount of variation--21% ($F = 5.42$, $df = 1.21$, $p < .05$) was accounted for by children's performance in one judgment task (select three), as well as when a second task was added (select two)--27% ($F = 3.70$, $df = 2.20$, $p < .05$).

Brief Discussion

There are three relatively clear findings. First, there is, again, an increase in the frequency with which elements of the key sequence are selected beyond second grade. This is supported by the number of statis-

tically significant and suggestive grade changes in the children's judgments. With only one exception, the second graders once again responded at a chance level in their frequency of choosing key categories. (The exception is the second graders' high frequency of selecting the Initiating Event when they were directed to choose only one part.)

The second finding is that the pattern of actual recall supports the saliency of the key sequence. At both grades, recall of propositions from the key event sequence is greater than recall of propositions from the other categories.

Finally, there is a modest relation between children's selection of significant elements of stories and their overall recall of stories. For the older children, but not the younger ones, the degree to which they selected the three key elements significantly predicted their recall performances.

CONCLUSIONS

Theory and past research suggest that in simple narratives, the basic sense of a story can be conveyed by knowing what precipitated a character's action, what the character did, and what resulted from the character's action. However, young elementary school children do not appreciate this fact. When asked to identify key elements of simple narratives, they fail to zero in on these three categories of information. In contrast, however, older elementary school children do select these categories a significant proportion of the time.

This finding was replicated in two experiments under a wide range of procedural variations including differences in instructions and differences

in the amount of information to be extracted from the stories. It is, therefore, quite a powerful result.

The youngest children are quite variable in their judgments. Depending upon the techniques we used to count frequencies, it seems that the second graders variously focused upon the Setting, Initiating Event, Internal Response, and/or the Reaction elements of stories in the different tasks. These choices may reflect two preoccupations: (a) with beginnings and endings of stories, and/or (b) with feeling states of the main character. In support of the first possibility, the setting is the first part of the story, the Initiating Event is the first part of the action sequence, and the Reaction is the last part of the story. In support of the second explanation, the Internal Response contains the character's feelings about a desired goal, while the Reaction contains the character's feelings about the attainment/nonattainment of the goal.

The fact that every age group selected the Initiating Event as its modal choice when given only one part of the story to pick, suggests that action beginnings are deemed important by everyone. For the older subjects, action beginnings are a sort of 'first-among-equals' in the event sequence.

Cognitive psychologists are coming to appreciate the importance of the link between what children know about cognitive events (metacognition) and their actual cognitive performances (e.g., Brown & DeLoache, 1978; Meichenbaum, 1977; Flavell, Note 1). The results of the second experiment underscore this message. For the older fifth grade subjects, the more knowledgeable children also recalled better. The failure to find a significant relation for second graders is probably due to the limited range of understanding they possess.

Finally, the study is evidence of the fruitfulness of combining research on metacognitive development with formal models of text analysis. Adequate text models will inevitably capture real psychological insights about prose known to mature readers and listeners. The prose system used here did just that. The insight tapped in the present study appeared rather early--in children as young as 10 years. Many other insights are likely to undergo a longer period of development.

Reference Note

1. Flavell, J. H. Cognitive monitoring. Paper presented at the conference on Children's Oral Communication Skills, University of Wisconsin, October 1978.

References

- Brown, A. L., & Deloache, J. Skills, plans, and self-regulation. In R. S. Siegler (Ed.), Children's thinking: What develops? New York: Lawrence Erlbaum Assoc., 1978.
- Brown, A. L., & Smiley, S. Rating the importance of structural units of prose passages: A problem of metacognitive development. Child Development, 1977, 48, 1-8.
- Danner, F. W. Children's understanding of intersentence organization in the recall of short descriptive passages. Journal of Educational Psychology, 1976, 68, 174-183.
- Flavell, J., & Wellman, H. Metamemory. In R. V. Kail & J. W. Hagen (Eds.), Perspectives on the development of memory and cognition. New York: Lawrence Erlbaum Assoc., 1977.
- Frederiksen, C. H. Semantic processing units in understanding text. In R. Freedle (Ed.), Discourse production and comprehension (Vol. I). Norwood, NJ: Ablex Publishing Corp., 1977.
- Kintsch, W. On comprehending stories. In M. A. Just & P. A. Carpenter (Eds.), Cognitive processes in comprehension. New York: Lawrence Erlbaum Assoc., 1977.
- Markman, E. Realizing that you don't understand: A preliminary investigation. Child Development, 1977, 48, 986-992.
- Meichenbaum, D. Cognitive behavior modification: An integrative approach. New York: Plenum Press, 1977.

Stein, N. L., & Glenn, C. G. An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), Discourse processing: Multidisciplinary perspectives. Norwood, NJ: Ablex Publishing Corp., 1978.

Stein, N. L., & Nezworski, T. The effects of organization and instructional set of story memory. Discourse Processes, 1978, 1, 177-194.